PRAJSNAR, Bronislaw; TROSZKIEWICZ, Czeslaw

Alkylation of aromatic compounds with substituted amides RNHCOR' and other reactions of amides in the presence of $POCl_3$. Rocz chemii 36 no.5:853-864 '62.

1. Department of Organic Chemistry, Technical University, Gliwice.

PRAJSNAR, Bronislaw; TROSZKIEWICZ, Czeslaw

Structure of the benzyl group structure of the amide $ArCHRNHCOC_6H_5$ and its influence upon the course of the bensylation reaction of aromatic compounds. Rocz chemii 36 no.5:843-851 '62.

1. Department of Organic Chemistry, Technical University, Gliwice.

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B187/B102

AUTHORS: Prajsnar Bronisław, Troszkiewicz Czesława

TITLE: Influence of the benzyl group structures of the amides $X-C_6-H_5-CHR-NH-CO-C_6H_5$ on the course of the benzylation of aromatic compounds

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 241-242, abstract 4Zh131 (Roczn. chem., v. 36, no. 5, 1962, 843-851 Pol.; summaries in Russ. and Eng.)

TEXT: In order to study the influence of the structure of the ArCH(R)-group on the course of the reaction when aromatic compounds are subjected to benzylation with amides of the general formula $ArCH(R)NHCOC_6H_5$ in the presence of $POCl_3$, toluene alkylation reactions were investigated under the influence of $2-R-3-R'-4-R''C_6H_2CH_2NHCOC_6H_5$ (Ia, b, c, d where (a) $R=R''=H$, $R'=C_2H_5O$; (b) $R=C_2H_5C$, $R'=R''=H$; (c) $R=R'=H$, $R''=C_2H_5O$;

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(d) R=R'=H, R"=NO_2) and $C_6H_5CH(R)NHCOC_6H_5$ (II, where R = C_2H_5) (IIa) as well as alkylation of benzene under the influence of II (R=C_6H_5) (IIb). Under the influence of $POCl_3$, the opening of the C-N bond and the breaking off of the $C_2H_5OC_6H_4CH_2$-group in the cases Ia, b, c take place easily with a high yield of C_6H_5CN (III). On the other hand, the C_2H_5O group decreases the yield of benzylation products of toluene, especially in case of its ortho or para position in which it is linked with the CH_2-group. At the same time, it increases the relative yield of dibenzylation products for the reaction with Ia (apparently a mixture of 3-(3'-C_2H_5O-$C_6H_4CH_2$)-4-$CH_2C_6H_3CH_2C_6H_5$ and 2-(3'-$C_2H_5OC_6H_4CH_2$)-5-$C_2H_5OC_6H_3CH_2C_6H_4CH_3$-4"). The NO_2-group counteracts the breaking off of the 4-$NO_2C_6H_4CH_2$-group so strongly that the main reaction product obtained is the initial substance Id. The C_6H_5-group in IIb promotes the course of the benzylation reaction to a high degree compared with the C_2H_5-group in IIa. When the latter was used,

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unsaturated hydrocarbons were found in the reaction products. 66 g $3\text{-}C_2H_5OC_6H_4CHO$ (IV) (b.p. 117-119°C/11 mm) are boiled in 300 ml alcohol and a solution of 85 g $NH_2OH \cdot 0.5\ H_2SO_4$ in 300 ml of water and neutralized Na_2CO_3 for one hour, 200 ml of the solvent are driven off, 300 ml water are added and the oxime of IV is separated (IVa), $C_9H_{11}NO_2$, m.p. 60-61°C (from benzene). 70 g of metallic Na is as quickly as possible added to 60 g of IVa in 550 ml of absolute alcohol, the mixture is boiled for about 2 hours, 200 ml of water are added gradually, about 500 ml of the distillate are dirven off with steam and from the rest is extracted with ether giving: 90% $3\text{-}C_2H_5\text{-}OC_6H_4NH_2$ (V), b.p. 120-122°C/13 mm, $n^{20}D$ 1.5303; hydrochloride (ChHt), $C_9H_{14}ClNO$, m.p. 134-135°C (from dioxane); picrate (PK), m.p. 178-179°C; acetamide (AD), $C_{11}H_{15}NO_2$, b.p. 197-198°C/3 mm, m.p. 60, 5-61°C (from benzene). 60 g C_6H_5COCl are added dropwise to the weighed quantity of 40 g V in 300 ml of 10% NaOH. This gives 69 g of Ia, $C_{16}H_{17}NO_2$, m.p.

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56-57°C (from benzene-gasoline). The synthesis of I is analogous (specifications are I, empirical formula, m.p. in °C): b, $C_{16}H_{17}NO_2$, 100-100.5 [2-$C_2H_5OC_6H_4NH_2$, yield 76%, b.p. 119-122°C/14 mm, $n^{20}D$ 1.5294; ChHt, $C_9H_{14}ClNO$, m.p. 164-165°; PK, m.p. 197-198°; AD, $C_{11}H_{15}NO_2$, m.p. 85-86°]; b, $C_{16}H_{17}NO_2$, 98-99 (4-$C_2H_5OC_6H_4NH_2$, yield 80%, m.p. 128-129°C/15 mm), and also IIb, m.p. 108-109°C [C_6H_5-$CH(C_2H_5)NH_2$, b.p. 94-95°/19 mm]. A Schotten-Baumann reaction on 4-$NO_2C_6H_4CH_2NH_2$ yields Ig, m.p. 155.5-156°C (from alcohol). To 0.1 moles of $(C_6H_5)_2CHOH$ and 0.1 moles of III in 60 ml of glacial CH_3COOH, 11 g of concentrated H_2SO_4 are added dropwise at 45°C in the course of 20 minutes, the mixture is heated to 45°C for 1 hour and then poured into 300 ml waterice mixture. This gives 91% IIa, m.p. 171-172° (from alcohol). 22 g of Ia, b, c, 90 ml of toluene and 33.5 g of $POCl_3$ are heated at 120°C for 3 hours; 1.69-1.74 moles of HCl are separated per mole of I; ice is added and the procedure described in the preceding paper (RZhKhim, 1960, no. 7, 26566) is carried out; the following substances

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separate (specifications are I, monoalkylation product, empirical formula, yield in %, b.p. in °C/mm, yield of III in %, residue in g): Ia, tolyl-(3-ethoxyphenyl methane, $C_{16}H_{18}O$, 43.5, 180-182/13, 1.5625, di-(3-ethoxy-benzyl)-toluene, $C_{25}H_{28}O_2$, ^{16} 20.8, 265-270/12, 88.4, 3; Ib, tolyl-(2-ethoxyphenyl)-methane, $C_{16}H_{18}O$, 15, 169-172/12, 1.5595, di-(2-ethoxy-benzyl)-toluene, $C_{25}H_{28}O_2$, 16.1, 220-226/1, 92, 9. Ic gave 2 g of a mixture of monoalkylation and dialkylation products, b.p. 160-240°/mm, 89% III and 7.3 g of residue. 19.2 g of Id, 90 ml of toluene and 28 g of $POCl_3$ are heated at 120°C for 3 hours; after ice has been added, 17.1 g of the initial substance Id separate; distillation effects the separation of 9% III and 1.3 g of a substance having a m.p. of 170-200°C/13 mm, from which 0.5 g of $4\text{-}NO_2C_6H_4COCl$, m.p. 69-70°C, can be separated (from alcohol). 18.3 g of IIb, 80 ml of C_6H_6 and 24 g of $POCl_3$ are heated at 120°C for 4 hours; after ice has been added, 4 g of $(C_6H_5)_3CH$ (VI), m.p. 79-82°C, are separated (from alcohol); distillation gives: 78% III, b.p.

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74-78°C/14 mm, 4.4 g of a mixture consisting of 13% $(C_6H_5)_2$-CHCl and 87% VI (total yield of VI 50.5%) and 3-5.4 g of residue, from which 29% 1.4-$[(C_6H_5)_2CH]_2C_6H_4$, m.p. 164-165°C are separated (from glacial CH_3COOH). 23.8 g of IIa, 100 ml of toluene and 37 g of $POCl_3$ are heated at 120°C for 3 hours; in the toluene solution the presence of 16.1% of an unsaturated compound (calculated with respect to $C_6H_5CH{=}CHCH_3$) is determined by means of 2.575 g Br_2; distillation gives 80% of III; bromination with a solution of Br_2 in CCl_4 yields 1.5 g of $C_6H_5CHBrCHBrCH_3$, m.p. 64-65°, (from alcohol). $C_{16}H_{18}$, yield 45.2%, b.p. 160-166°C/12 mm, $n^{20}D$ 1.5682 is separated from a higher fraction (9.5 g), b.p. 160-170°C/13 mm, ethylphenyl-n-tolyl methane. Oxidizing the higher fraction with $Na_2Cr_2O_7$ in CH_3COOH gives 4-$C_6H_5COC_6H_4COOH$, m.p. 190-192°C. [Abstracter's note: Complete translation.]

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AUTHORS: Prajsnar, Bronisław, Troszkiewicz, Czesława

TITLE: On the alkylation of aromatic compounds with substituted amides RNHCOR' and on other reactions of amides in the presence of $POCl_3$

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 242-243, abstract 4Zh132 (Roczn. chem., v. 36, no. 5, 1962, 853-864 Pol.; summaries in Russ. and Eng.)

TEXT: The following particular facts can be established about the reactions of the amides having the general formula RNHCOR' (I) with aromatic compounds (ARV) in the presence of $POCl_3$: (a) when R = $(C_nH_{2n+1})_2$-CH or R = $(C_nH_{2n+1})_3C$, R is easily broken off; this leads to the formation of alkylation products of the ARV, unsaturated hydrocarbons, other substitution products and corresponding nitriles. (b) when R = $C_nH_{2n+1}CH_2$, the C-N bond is considerably more stable and these amides are not subjected to deamination if they are influenced by $POCl_3$; on the other hand,

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different reactions come about depending on the kind of acyl; e.g., in case of I ($R = C_4H_9$, $R' = C_6H_5$) (Ia) deacylation comes about with the formation of C_6H_5COCl. The reactions, both the alkylation and the elimination, are apparently monomolecular with the usual stage of the carbonium ion formation R^+. As regards orientation both reactions proceed according to the Zaitsev rule. Reducing 10 g of $(CH_3)_2CHCH{=}NOH$ in 100 ml of alcohol with Na (50% excess) gives 40% $(CH_3)_2CHCH_2NH_2$, b.p. 67-69°C, which is benzoylated by the Schotten-Baumann method; extraction with ether and removal of the solvent yields I [$R = (CH_3)_2CHCH_2$, $R' = C_6H_5$] (Ib), b.p. 170-171°C/11 mm, m.p. 56.5-67°C. 50 g of $C_5H_{11}C(CH_3){=}NOH$ (b.p. 98-99°C/11 mm), 55 g of Na and 38 ml of alcohol are used to synthesize 62% $C_5H_{11}CH(NH_2)CH_3$, b.p. 139-142°C in an analogous manner; I [$R = C_5H_{11}CH(CH_3)$, $R' = C_6H_5$] (Ic), m.p. 70-71°C is obtained from this by the Schotten-Baumann method (from thinned alcohol). $(CH_3)_3COH$ (II) is benzoylated up to I [$R = (CH_3)_3C$, $R' = C_6H_5$], (Id). 19.3 g of

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concentrated H_2SO_4 is added dropwise to 13 g of $(CH_3)_3COH$ (II) and 19.2 g of C_6H_5CN (III) over a period of 15 minutes at a temperature of less than 40°; the mixture is heated at 40°C for one hour, 150 g of ice are added and then 84% Id, m.p. 133.5-134°C are obtained (from benzene). If concentrated H_2SO_4 is added to a mixture of I and II in glacial CH_3COOH at 50°C, the yield of Id is 72%. For other I obtained by various methods R, R', b.p. in °C/mm, m.p. in °C are given: cyclo-C_6H_{11}, CH_3 (Ie), 160-161/15, 104-104.5; cyclo-C_6H_{11}, C_6H_5 (If), -, 149-150; Ia, 181-184/13, -; $C_2H_5CH(CH_3)$, C_6H_5 (Ig), -, 85-86; C_6H_{13}, CH_3 (Ih), 141-142/10, -, $n^{20}D$ 1.4459; C_6H_{13}, C_6H_5 (Ii), 212-215/23, 44-45; C_7H_{15}, CH_3 (Ik), 151-153/11, -, $n^{20}D$ 1.4468. Cyclo-$C_6H_{11}NHSO_2C_6H_5$ (IV), m.p. 90-91° was also obtained. 0.1 moles of Id and 36 g of $POCl_3$ are heated 2.5 hours at 135° (bath temperature) in 90 ml of M-xylol (V) (separation of HCl), ice is added, and the non-reacted V, containing cyclohexene (VI) (yield 66%, determined by bromination), CH_3CN and 3.8% cyclohexyl-M-xylol (VII), b.p. 130-140°C/13 mm,

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$n^{20}D$ 1.5250, is separated by fractional distillation of the solution. 11.16 g of Br_2 are necessary to saturate the fraction containing V. This corresponds to a cyclohexene yield of 65.6%. For analogous reactions of I with ARV in the presence of $POCl_3$, the initial substances, reaction conditions, reaction products (in all cases separation of HCl) are now given: 0.1 mole If and 36 g $POCl_3$ in 100 ml toluene, 120°C, 2.5 hours, 45% cyclohexane (VIII), 23% cyclohexyl toluene (b.p. 253-255°C, 136-138°C/23 mm, $n^{18}D$ 1.5240) and 9.1 g III; 0.1 mole If and 36 g $POCl_3$ in 100 ml V, 140°, 2.5 hours, 31.4% VIII, 35.6% VII (b.p. 135-139°C/12 mm, $n^{18}D$ 1.5253) and 8 g III; 0.1 mole If and 36 g $POCl_3$ in 100 ml anisole (IX), 140°C, 2.5 hours, 8.3% VIII, 67.8% cyclohexyl anisole (X) (b.p. 141-143°/11 mm, $n^{18}D$ 1.5330; on letting it stand for a while, 1.42 g p-X, m.p. 58-59°C settle; When the filtrate is cooled down to -10°, o-X is separated, m.p. 265-270°C, $n^{20}D$ 1.5305 together with 7.29 g III; 11.45 g Ic and 18.5 g $POCl_3$ in 50 ml IX, 3 hours, 140°C, 76% III, 53.5% (1-methyl hexyl)-

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anisole ($C_{14}H_{22}O$, b.p. 133-136°C/11 mm, $n^{20}D$ 1.4970) and a certain amount of an unsaturated compound; 20.3 g If and 25 g $POCl_3$, 1 hour, 150-160°C (bath temperature) with distillation of the reaction products, 73% VI (b.p. 81-82°C), a certain amount of III and chloro cyclohexane; 21.9 g Ic and 30 g $POCl_3$, as in preceding case; 67.4% heptene-2 (b.p. 97-100°C, $n^{20}D$ 1.4043; oxidation with $KMnO_4$ leads to C_4H_9COOH, b.p. 180-185°C; anilide, m.p. 60-61°) a certain amount of III and 0.3 g $C_5H_{11}CHClCH_3$ (b.p. 142-146°C, $n^{20}D$ 1.4273); 17.7 g Ig and 36 g $POCl_3$ in $POCl_3$ in 90 ml V, 3 hours, 120°C (bath temperature), 64.5% butene-2 (distilled off during the reaction and absorbed in a solution of Br_2 in CCl_4); $(CH_3CHBr)_2$, b.p. 154.5-157°C, $n^{20}D$ 1.5104), 82% III and 6.8% sec-butyl-M-xylene (b.p. 190-200°, $n^{20}D$ 1.4975); 17.7 g Id and 36 g $POCl_3$ in 100 ml toluene as in preceding case, 57.8% isobutylene absorbed in a solution of Br_2 in CCl_4; $CH_2BrCBr(CH)_3C_2H_5$, b.p. 148-152°C, $n^{20}D$ 1.5112), 77.5% III and 18% tert-

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butyl toluene (b.p. 190-196°C, $n^{20}D$ 1.4940); 17.7 g Ia and 36 g $POCl_3$ in 100 ml toluene, 3 hours, 120°C, as before 2.4 g C_6H_5COCl (b.p. 50-80°C/14 mm; anilide, m.p. 161-162°C), 14 g of the initial substance Ia (b.p. 186-188°C/14 mm, $n^{20}D$ 1.5360) and 2.2 g of a substance which dissolves in concentrated H_2SO_4; 17.7 g Ib and 36 g $POCl_3$ in 100 ml V, 3 hours, 140°C, as before, 18% III, 6.8 g of the initial substance Ib (b.p. 165-175°C/13 mm, m.p. 56-57°C (from benzene)) and 2.3 g of a substance soluble in concentrated H_2SO_4; 20.5 g I and 36 g $POCl_3$ in 100 ml toluene, 3 hours, 120°C (in the bath), 13.8 g of the initial substance Ii (b.p. 200-210°C/16 mm, m.p. 44-45° (from benzene)) and 5 g of a substance soluble in concentrated H_2SO_4; from the reaction of Ih, k with $POCl_3$ in toluene (3 hours, 120°C) no particular substances are obtained; in an analogous reaction between 11.9 g IV and 18 g $POCl_3$ in 50 ml V (3 hours, 140°C) HCl is separated; 7.1 g of the initial substance IV are obtained, but alkylation products of V cannot be established. If $POCl_3$ is replaced

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by 30 g P_2O_5, 20% VI are separated; at 120°C, 13.2% VI and 45% IV are obtained. [Abstracter's note: Complete translation.]

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FRAJDNAJ, B.

Benzylation of aromatic compounds with N-benzylacetamide. p.1283.

ROCZNIKI CHEMII. Warszawa, Poland. Vol. 32, no. 6, 1958.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

PRAJSNAR, B.

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Benzylation of aromatic compounds with N-benzylacetamide. Bronisław Prajsnar (Politechnika Śląska, Gliwice, Poland). Roczniki Chem. 32, 1283-8(1958)(English summary).—Attempts were made to cyclize N-benzylacetamide (I) to methylisoindole under the conditions of the Bischler-Napieralski reaction. Heating I with P_2O_5 and toluene gave 23% p-benzyltoluene, b_{18} 143-4°, and 7.7% 2,4-dibenzyltoluene, b_{18} 229-34°. I with anisole gave 25% p-benzylanisole, b_{13} 165-8°, and 10% dibenzylanisole, b_5 207-8°. I with m-xylene gave 39% 2,4-dimethyldiphenylmethane, b_4 135-6°, with 1-methoxynaphthalene, 30% 1-methoxy-4-benzylnaphthalene, b_4 209-11°, and with m-dimethoxybenzene 41% 2,4-dimethoxydiphenylmethane, b_{10} 215-20°. A. Kręglewski

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PRAJSNAR, Bronislaw

Identification of aromatic secondary and tertiary alcohols as n - substituted amides. Chem anal 8 no.2:255-259 '63.

1. Department of Organic Chemistry, Politechnika, Gliwice.

PRAJSNAR, Bronislaw

Reactions of ε-caprolactam with $POCl_3$. Rocz chemii 36 no.10:1449-1452 '62.

1. Katedra Chemii Organicznej, Politechnika, Gliwice.

FRAJSNAR, Bronislaw

Relation between alkylating properties of N-benzylamides and the kind of condensing agent used. Rocz chemii 35 no.6:1635-1639 '61.

1. Department of Organic Chemistry, Silesian Institute of Technology, Gliwice.

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B166/B101

AUTHORS: Prajsnar, Bronisław, Troszkiewicz, Czesława

TITLE: The effect of the structure of the acyl residue of $C_6H_5CH_2NHCOR$ amide on the course of the reaction of aromatic compound benzylation

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 257, abstract 23Zh137 (Roczn. chem., v. 36, no. 2, 1962, 265-274 [Pol.; summaries in Russ. and Eng.])

TEXT:. A study has been made of the reaction of toluene benzylation by the action of $C_6H_5CH_2NHCOR$ (Ia-k, where (a) R = H, (b) R = CH_3, (c) R = C_2H_5, (d) R = tert-C_4H_9, (e) R = CH_2Cl, (f) R = CCl_3, (g) R = C_6H_5, (h) R = o-$NO_2C_6H_4$, (i) R = p-$NO_2C_6H_4$, (k) R = p-$CH_3OC_6H_4$); also by the action of N-benzyl benzene sulfonamide (II) and of N-benzyl phthalimide (III) in the presence of $POCl_3$. The dependence of benzyl toluene (IV) yield on the structure of the acyl residue of I-III is used to show that the reaction mechanism

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is one of electrophilic substitution. A similar reaction of Ig with C_6H_6, toluene, m-xylene, anisole and C_6H_5Br gave their mono- and dibenzyl substitutes. The reaction between Ig and $C_6H_5NO_2$ does not go. The method of producing Ia, c, d, e has been improved and Ih was synthesized. A mixture of 25 g $C_6H_5CH_2NH_2$ (V) and 50 ml 90% HCOOH is boiled for 30 min, the excess acid is removed by vacuum distillation, the product is Ia, yield 28.5 g, b.p. 169-172°/11 mm Hg, m.p. 63-64°C (from gasoline-benzene 4:1). A mixture of 25 g V and 70 g C_2H_5COOH is boiled for 5 hrs, 55 g of fluid is distilled off, 40 g C_2H_5COOH are added to the residue, this is boiled for a further 3 hrs, giving Ic, yield 89.2%, b.p. 180-185°C/14 mm Hg, m.p. 54-55°C (from gasoline-benzene). Id is produced by reacting 13 g tert-C_4H_9COCl with 12 g V; Id is $C_{12}H_{17}ON$, the yield 16.5 g, m.p. 82.5-83°C (from gasoline). 25 g V is acylated in pyridine by the action of 43 g CCl_3COCl at 50°C, the mixture is diluted with water, the product is I f,

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yield 40.2 g, m.p. 93-94°C (from alcohol). A mixture of 42 g o-$NO_2C_6H_4COOH$ and 45 g $SOCl_2$ in 150 ml C_6H_6 is boiled for 1 hr, 80 ml of fluid is distilled off and a solution of 54 g V in 50 ml C_6H_6 is added a drop at a time to the residue, this mixture is boiled for 20 min diluted with water and the product is Ih, $C_{14}H_{12}O_3N_2$, yield 72%, m.p. 124-125°C (from alcohol). A mixture of 0.1 g mole I, 100 ml toluene and 37 g $POCl_3$ is heated for 3 hrs at 120°C, cooled, ice is added, this is then filtered and IV is extracted with toluene (the I-III are given and the yield of IV as %): Ia, 1.65; Ib, 45.5; Ic, 25.2; Id, 48.7; Ie, 25.4; If, 0; Ig, 70.7; Ih, 60.5; Ii, 70; Ik, 61; II (P_2O_5 instead of $POCl_3$), 36; III, 0. A mixture of 0.1 mole Ig, excess aromatic hydrocarbon and 37 g $POCl_3$ is heated for 3 hrs at 140°C, cooled, ice is added and the appropriate mono- and dibenzyl derivatives are separated (the following table gives the aromatic hydrocarbon, quantity in g, the monoderivative produced, its yield %, boiling point in °C/mm Hg, n_D^{20}, the di-derivative produced, its yield %,

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boiling point in °C/mm Hg, n_D^{20}): C_6H_6, 70, diphenyl methane, 38, 126-128.5/11, m.p. 26-27°C, -, dibenzyl benzene, 11.6, 218-224/12, m.p. 68-72°C, -; toluene, 80, benzyl toluene, 70.7, 140-143/12, 1.5710, dibenzyl toluene, 10, 220-235/12, 1.6002; m-xylene, 90, benzyl-m-xylene, 71.5, 148-152/11, 1.5694. dibenzyl-m-xylene, 9.1, 230-240/14, 1.5895; anisole, 100, benzyl anisole, 78, 162-165/11, 1.5769, dibenzyl anisole, 11.1, 220-240/12, 1.6010; bromobenzene, 120, benzyl bromobenzene, 22.2, 163-167/12, 1.6041 (identified by transformation by the Grignard reaction into $p\text{-}C_6H_5CH_2C_6H_4COOH$, m.p. 158-159°C), -, -, -, -. [Abstracter's note: Complete translation.]

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S/081/62/000/021/016/069
B156/B101

AUTHORS: Prajsnar, Bronisław, Troszkiewicz, Czesława

TITLE: Relationship between the properties of alkylating N-benzylamides and the nature of the condensing agent

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 148, abstract 21Zh108 (Roczn. chem., v. 35, no. 6, 1961, 1635 - 1639 [Pol.; summaries in Russ. and Eng.])

TEXT: When m-xylene (I) is benzylized by the action of $C_6H_5CH_2NHCOC_6H_5$ (II) in the presence of dehydrating and condensing substances (DCS) [P_2O_5 (III), $POCl_3$ (IV), PCl_5, PBr_5, PCl_3, $SOCl_2$ or $AlCl_3$], products of mono- and dibenzylizing are only obtained when using III or IV. The by-products are $C_6H_5CH_2Cl$ (V), C_6H_5CN (VI) and HCl, their formation being possible by the following scheme: II + $PCl_5 \longrightarrow C_6H_5CH_2N{=}CClC_6H_5$ (VII) + $POCl_3$; when heated, VII decomposes to form V and VI; VIII + $H_2O \longrightarrow$ II+HCl. I, $C_6H_5CH_3$ (VIII) and anisole (IX) have been benzylized by the action of

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Relationship between the...

$C_6H_5CH_2NHCOCH_3$ (X) in the presence of IV. According to Schotten-Baumann, 30 g $C_6H_5CH_2NH_2$ (XI) and 55 g C_6H_5COCl yield 95.3 % II, m.p. 106 - 107°C. After 25 g XI and 30 g C_6H_5COOH have been heated at 160 - 180°C for 6 hrs, the total yield of II from the melt is 79.1 %. 0.1 moles II, 100 ml I, and a corresponding amount of DCS are heated for 3 hrs at 120°C (reflux condenser; the P_2O_5 is added in two batches: 35 g at the start, and a further 20 g 30 min later); when cool, it is dissociated with ice, and after a few hours 20 ml I are drawn off with the water layer, and the reaction products separated from the combined organic layers. The DCS are given, also the benzylizing products of I, the other reaction products, and the amount of recovered II in g: 55 g III, 57.3 % monobenzyl-I (XII) and 9.8 % dibenzyl-I (XIII), 5.7 g VI, -; 37 g IV, 71.5 % XII and 9.8 % XIII, 164 g V, 9.2 g VI and HCl, -; 42 g PCl_5, -, 5.76g V, 1.59 g VI and HCl, 11.5; 90 g PBr_5, -, 44 g of a liquid substance with a boiling point of 70 - 90°C/16 mm Hg con- (content of VI 6.4 g, content of Br 34.7 %) and HCl, 4.2; 50 g PCl_3, -, 0.15 g V, 0.1 g VI and HCl, 14; 71 g $SOCl_2$, -, 1.32 g V, 1.16 g VI and HCl,

Card 2/3

13.2; 42 g $AlCl_3$ (in toluene), solid unidentified product, -. For 3 hrs 25 g X, 66 g IV and 150 ml of I, VIII or IX are heated at 120°C; they are dissociated with ice, and the products of the reaction separated (the initial substance and the reaction products are given): VIII, 45.6 % benzyl toluene (b.p. 139 - 141°C/11 mm Hg, n_D^{20} 1.5715), 7.05 % of dibenzyl toluene (b.p. 215 - 235°C/11 mm Hg, n_D^{20} 1.5955) and 11.8% V; I, 46.1 % XII (b.p. 157 - 158°C/14 mm Hg, n_D^{20} 1.5697), 3 % XIII (b.p. 235 - 245°C/12 mm Hg, n_D^{20} 1.5972) and 9.4% V, b.p. 60 - 70°C/11 mm Hg; III, 57.7 % benzyl anisole (b.p. 157 - 160°C/10 mm Hg, n_D^{20} 1.5773) and 8.3 % dibenzyl anisole, b.p. 200 - 210°C/2 mm Hg, n_D^{20} 1.6010. [Abstracter's note: Complete translation.]

Card 3/3

POLAND

PRAJSNAR, Bronislaw, doc. dr; MASLANKIEWICZ, Andrzej, mgr inz; NAJZAREK, Zbigniew, mgr inz.

Department of Organic Chemistry, Polytechnic, Silesia (Katedra Chemii Organicznej Politechniki Slaskiej), Gliwice - (for all).

Warsaw, Chemia analityczna, No 6, November-December 1965, pp 1221-1225.

"N-(diphenyl)-methylamides - the derivatives for identification of aliphatic and aromatic nitriles."

PRAJSNAR, Danuta

Spectrophotometric method of determination of rare earth elements by thymolphthalexon. Chem anal 7 no.4:861-862 '62.

1. Department of Inorganic Chemistry, Polytechnic, Gliwice.

S/081/62/000/021/007/069
B168/B101

AUTHOR: Prajsnar, Danuta

TITLE: Spectrophotometric method of determining samarium by means of xylenol orange

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 96, abstract 21D82 (Chem. analit. [Polska], v. 6, no. 5, 1961, 885-886 [Pol.; summary in Eng.)

TEXT: To determine microgram quantities of samarium the author proposes a spectrophotometric method based on the formation of a colored complex of samarium with xylenol orange (light-adsorption maximum at 576 mμ). The solution to be analyzed receives an addition of 1.5 ml of an aqueous solution containing 0.05% of xylenol orange, the mixture is adjusted to pH 5.5 with an acetate buffer mixture and diluted with water to 25 ml; it is then analyzed spectrophotometrically at 576 mμ. The samarium concentration of 0.5-4.0 γ/ml appeared to follow Beer's law.
[Abstracter's note: Complete translation.]

Card 1/1

PRAJSNAR, Danuta

Spectrophotometric determination of samarium using xylenol orange. Chem anal 6 no.5:885-886 '61.

1. Department of Inorganic Chemistry, Silesian Politechnical College, Gliwice.

PRAJSNER, Bronislaw

N-substituted amides as derivatives from the identification of tertiary aliphatic alcohols. Chem anal 6 no.6:1039-1044 '61.

1. Department of Organic Chemistry, Silesian Polytechnical College, Gliwice.

PRAJSNAR, Bronislaw; TROSZKIEWICZ, Czeslawa

Influence of the structure of the remaining acyl group in $C_6H_5CH_2NHCOR$ amide in the course of benzylation of aromatic compounds. Rocz chemii 36 no.2:265-274 '62.

1. Department of Organic Chemistry, Silesian Institute of Technology, Gliwice.

PRAK, K.

1779. Technical progress in the decorating section of a tableware porcelain factory. PRAK (*Szkło i Ceramika*, 7, No. 2, 44, 1956). Use of round table with fixed rim and revolvable central discs to facilitate team working of painters or painters-and-printers. Full advantages of group working are only apparent when tasks can be divided so that operational times for all members of the group are equal.

BOBR, Jan; PRAK, Wlodzimierz

Effect of the decrease of body temperature on anaphylactic shock in guinea pigs. Polski tygod. lek. 10 no.1:19-20 3 Jan 55.

1. Z Zakladu mikrobiol. lekarskiej A.M. w Krakowie, ul. Czysta 18, kierownik prof. dr. Z.Przybylkiewicz

(BODY TEMPERATURE
eff. of low temperature anaphylactic shock in guinea pig)
(ALLERGY
anaphylactic shock, eff. of low body temperature in guinea pig)

PRAKACH, DHARAM

POLAND/Physical Chemistry - Surface Phenomena, Adsorption, B.
Chromatography, Ion Exchange.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 46164

Author : S.P. Mitra, Dharam Prakach.

Inst : Academy of Sciences of Poland.

Title : Effect on the Ratio of the Volume of the Leaching Solution and Weight of the Mineral, and Dilution in the Exchange of Calcium, Magnesium, Potassium and Sodium from Different Cation Exchange Systems.

Orig Pub : Bull. Acad. polon. Sci., 1957, Cl. 3, 5, No 12, 1149-1156, XCIV.

Abstract : The exchange of Ca, Mg, K and Na ions of siliceous minerals as, for example, kaolinite, montmorillonite, haloisite, vermiculite, biotite and muscovite depends on the ratio of the mineral to the solution.

Card 1/2

POLAND/Physical Chemistry - Surface Phemomena, Adsorption, Chromatography, Ion Exchange. B.

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 46164

The higher that ratio, the greater number of cations (Ct) is exchanged. The exchange of the mineral Ct-s depends also on the concentration of the solution. The dilution degree influences the exchange of cation pairs of different valence somewhat more than the exchange of cation pairs of the same valence. It may be established as a rule that the amount of Ct-s subject to the exchange rises with the rise of the concentration of the leaching solution. But the rate of the rise of the Ct amount decreases with the rise of the leaching solution concentration.

Card 2/2

PRAKAPCHUK, A.Ya.; BANDAROVICH, A.G.; CHARNAMORTSAVA, N.I.; KARPOVICH, Ye.A.; KASTSENICH, N.

Fungous flora of the normal and pathological skin. Vestsi AN BSSR no.3:153-158 My-Je '52. (MLRA 7:8)
(Dermatophytes)

PRAKAS, Bamu [Prakash, Bhamu], B. Sc. (Met. Eng.)

Welding of two different metals. Zavarivac 7 no.1:17-20 '62.

1. Sada na radu u Institutu za metalurgiju, Sisak 3.

PRAKASH, DHARAM

B-13

EAST GERMANY/Physical Chemistry - Surface Phenomena.
Adsorption. Chromatography. Ion Exchange.

AUs Jour : Ref Zhur - Khimiya, No 8, 1958, 24360

Author : Mitra, S.P., Prakash Dharam
Inst : -
Title : Adsorption of Phosphate by Indian Clays (Kaolinite and Montmorillonite) at Different pH Values.

Orig Pub : Z. phys. Chem. (DDR), 1957, 207, No 3-4, 205-209

Abstract : Determinations were made of the adsorption of phosphates from solutions of H_3PO_4, KH_2PO_4, K_2HPO_4, K_3PO_4, at pH 4-9, on kaolinite (I) and montmorillonite (II) of Indian deposits. I and, to a lesser degree, II absorb phosphates over the entire pH range. Adsorption is greater in the acid range due to the formation, at the surface of the minerals, of phosphates of Fe (with I) and Al (with I and II). With increase of pH the adsorption decreases

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omena.
ion Exchange.
, No 8, 1958, 24360 P-13

e to a lowering of the activity of Fe and Al; it is possible that in the alkaline range there takes place an exchange of PO_4^{3-} and OH^- ions in the crystal lattice of the minerals.

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PRAKASH, B.

I-2

USSR/Chemical Technology - Chemical Products and Their Applications, Chemical Nuclear Engineering Questions.

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8767

Author : Prakash, B. and Sundaram, S.V.

Inst :

Title : Separation of Hafnium from Zirconium by the Selective Oxidation of Zirconium in Mixed Chloride Vapors.

Orig Pub : Khimiya yadernogo goryuchego (Dokl. in. uchenykh na Mezhdunar. konferentsii po mirnomu ispol'zovaniya atom. energii, Zheneva, 1955), Goskhimizdat, Moscow, 1956, 523-532.

Abstract : Thermodynamic calculations have been made for the reactions $ZrCl_4(gas) + O_2 \rightleftharpoons ZrO_2 + 2Cl_2$ (1) and $HfCl_4(gas) + O_2 \rightleftharpoons HfO_2 + 2Cl_2$ (2) in the temperature range 500-1200°; at 1,000°, the ΔF and K_p for reaction (1) are -30,900 and 2.02×10^5, respectively

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USSR/Chemical Technology - Chemical Products and Their Applications, Chemical Nuclear Engineering Questions. I-2

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8767

(P_{Cl_2}/P_{O_2} 4.5 x 10^2); for reaction (2) the corresponding values are 52,540, 9.55 x 10^{-10}, and 3.09 x 10^{-5}, respectively. Thus the possibility of separating ZrO_2 by the selective oxidation of a mixture of $ZrCl_4$ and $HfCl_4$ in the presence of Cl_2 and O_2 has been established. In the experimental setup the chloride is obtained by the chlorination of zirconium carbide at 500°. The product, in addition to Hf, contains the following (in percent): Si 0.1, Ti 0.06, and Fe 0.18. Si and Ti are separated by fractional distillation. The chloride containing 0.01% Si, 0.002% Ti, and 2.54% HfO_2 (on the basis of $ZrO_2 + HfO_2$) is distilled in a stream of dry Cl_2 and passed into a furnace where it is reacted with Cl_2 and O_2. At a Cl_2 : O_2 ratio of 1.2, a temperature of 800°, and a contact time of one hour, the precipitate

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USSR/Chemical Technology - Chemical Products and Their Applications, Chemical Nuclear Engineering Questions. I-2

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8767

contains 1.4% Hf and the volatile products, 25% Hf. The yield of ZrO_2 is 90-97%. Similar results were obtained with a wide range of temperatures and pressure ratios.
The bibliography lists 20 items.

Card 3/3

C

GDR/Inorganic Chemistry. Complex Compounds.

Abs Jour: Ref Zhur-Khim., No 23, 1958, 76933.

Author : Tripathi S.C., Prakash S.
Inst :
Title : Composition of Uranyl O-Cresotate Complex: A Colorimetric Study.

Orig Pub: Z. phys. Chem. (DDR), 1958, 208, No 3-4, 181-187.

Abstract: It is shown by the colorimetric method that only one complex of the composition 1 : 1 is formed at 32° in a solution containing uranyl nitrate and o-cresylic acid. The color of that complex is dark-red. The maximum complex formation is observed at pH = 4.5. At pH above 4.5, the complex dissociates and the color is fading; the complex decomposes in an alkaline medium and uranyl hydroxide is pre-

Card : 1/2

Abs Jour: Ref Zhur-Khim., No 23, 1958, 76983.

cipitated. The equation of the complex formation is the following:

$$UO_2^{++} + C_7H_6(OH)COONa \longrightarrow \left[C_7H_6\begin{matrix}O\\COO\end{matrix}UO_2\right]^{+} + H^{+} + Na^{+}.$$

I. Slonim.

ALEXI, Istvanne; PRAKFALVI, Endre.

Shiny nickel plating. Gepgyartastechn 2 no.9:348-349 S '62.

FRANKIN, A.Ye.

Broadening of the zones of stable operation of the synchronous generators of a unified electric power system using compensating devices. Trudy MEI no.54:123-128 '64.

Use of compensating devices for broadening the zones of stability of a synchronous generator with an excitation controller with strong action. Ibid.:149-164

(MIRA 17:12)

KONOVALOV, N.I., kand.tekhn.nauk, dotsent; PRAKHIN, B.Ya., inzh.;
SANDLER, A.I., kand.tekhn.nauk, dotsent

Operations of the feed pumps of thermal electric power plants with variations and loss of magnetic flux. Izv.vys.ucheb.zav.; energ. 5 no.11:51-57 N '62. (MIRA 15:12)

1. Ivanovskiy energeticheskiy institut imeni V.I. Lenina. Predstavlena kafedroy elektricheskikh stantsiy i podstantsiy.
(Pumping machinery, Electric)

PRAKHIN, B.Ya., inzh.

Frequency characteristics of the sections of a complex electric power system. Izv. vys. ucheb. zav.; energ. 5 no.6:1-8 Je '62. (MIRA 15:6)

1. Ivanovskiy energeticheskiy institut imeni V.I.Lenina. Predstavlena kafedroy elektricheskikh setey, sistem i tekhniki vysokikh napryazheniy.
(Electric power distribution)

KONOVALOV, N.I., dots.,kand.tekhn.nauk; PRAKHIN, B.Ya., inzh; SANDLER, A.I. dots.,kand.tekhn.nauk.

Increasing the efficiency of centrifugal mechanisms of electric power stations. Izv.vys.ucheb.zav.,energ. no.8:25-31 Ag '58. (MIRA 11:11)

1. Ivanovskiy energeticheskiy institut imeni V.I. Lenina.
(Electric power plants--Equipment and supplies)

S/143/62/000/006/001/008
D238/D308

AUTHOR: Prakhin, B. Ya., Engineer

TITLE: Frequency characteristics of the sections of a complex electrical system

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika, no. 6, 1962, 1-8

TEXT: Methods are examined for determining the frequency characteristics and parameters of equivalent circuits of the elements of a system in case of stabilized forced oscillations. A complex electrical system is subject to small irregular disturbances caused by load variations and changes in the working parameters of the elements, leading to deviations in the phase currents and voltages which vary with frequencies $(\omega_s \pm \gamma)$, where ω_s is the system frequency, and γ is the frequency of the irregular oscillations. Current and voltage deviations with frequencies $\pm \gamma$ can be represented by vectors with different directions of rotation. Methods

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S/143/62/000/006/001/008
D238/D308

Frequency characteristics of ...

for determining the frequency characteristics of the system elements are considered, starting from the equation for a synchronous machine with automatic excitation-control with the corresponding system of equations for the negative and positive-sequence components. The possibility is demonstrated of constructing equivalent circuits for all the elements of an electrical system in conditions of stabilized forced oscillations and consequently for a complex electrical system of any configuration. In the general case, conductances can be determined by means of a static model on which equivalent circuits of the system are selected for forced-oscillation conditions for a number of frequencies. For a radial electrical system analytical expressions can be obtained for the conductances of the equivalent circuit in the general form. Determination of the frequency characteristics of the sections of a complex electrical circuit can be carried out in the general case by means of static models. In individual cases the characteristics can be calculated analytically. Matching the sections of the electrical system with the corresponding frequency characteristics, affords re-

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S/143/62/000/006/001/008
D238/D308

Frequency characteristics of ...

presentation of these sections in static stability calculations by means of the frequency-phase method in the form of separate lumped elements. There are 4 figures.

ASSOCIATION: Ivanovskiy energeticheskiy institut imeni V. I. Lenina (Ivanov Institute of Power Engineering imeni V. I. Lenin)

SUBMITTED: April 27, 1961

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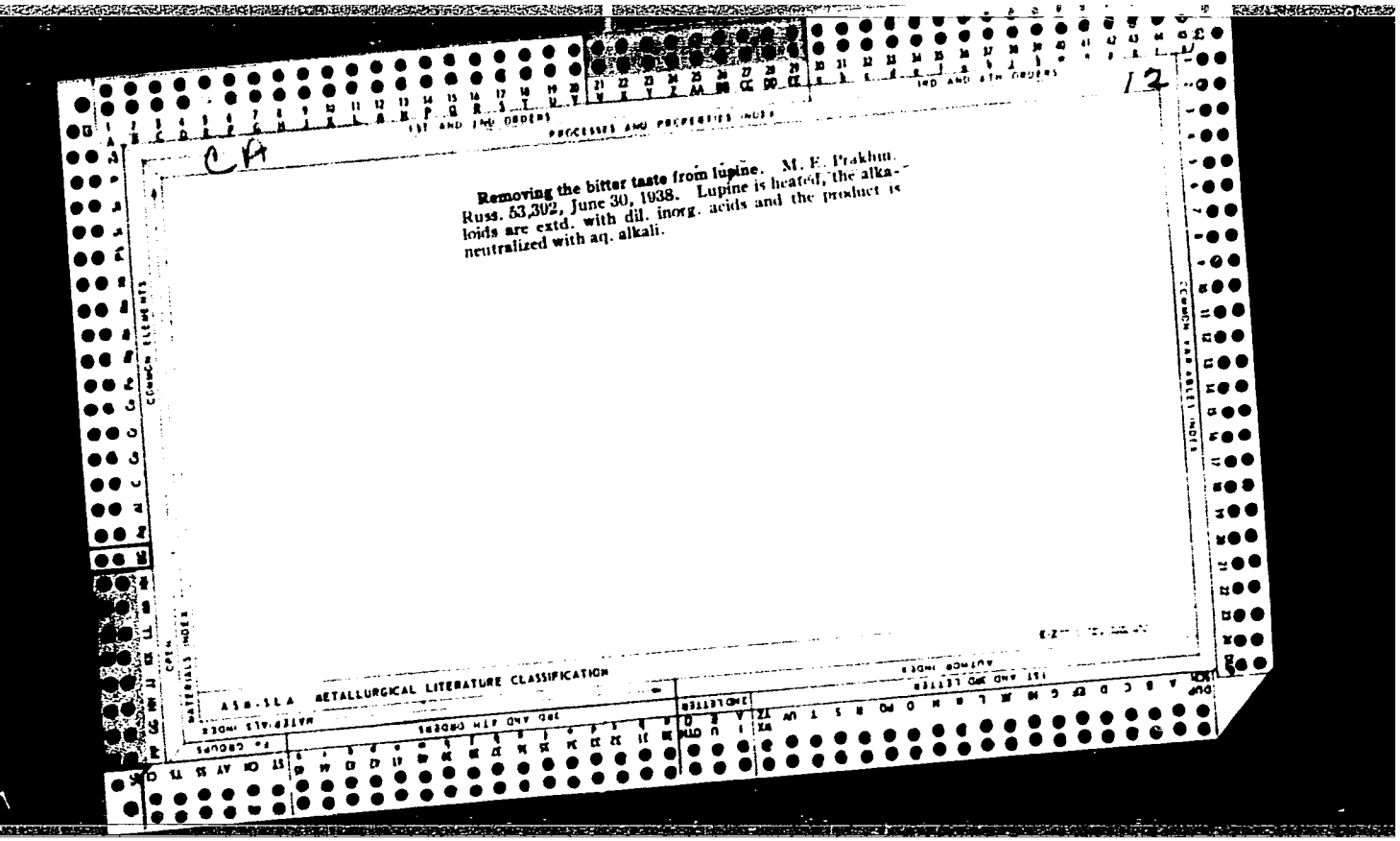

CA

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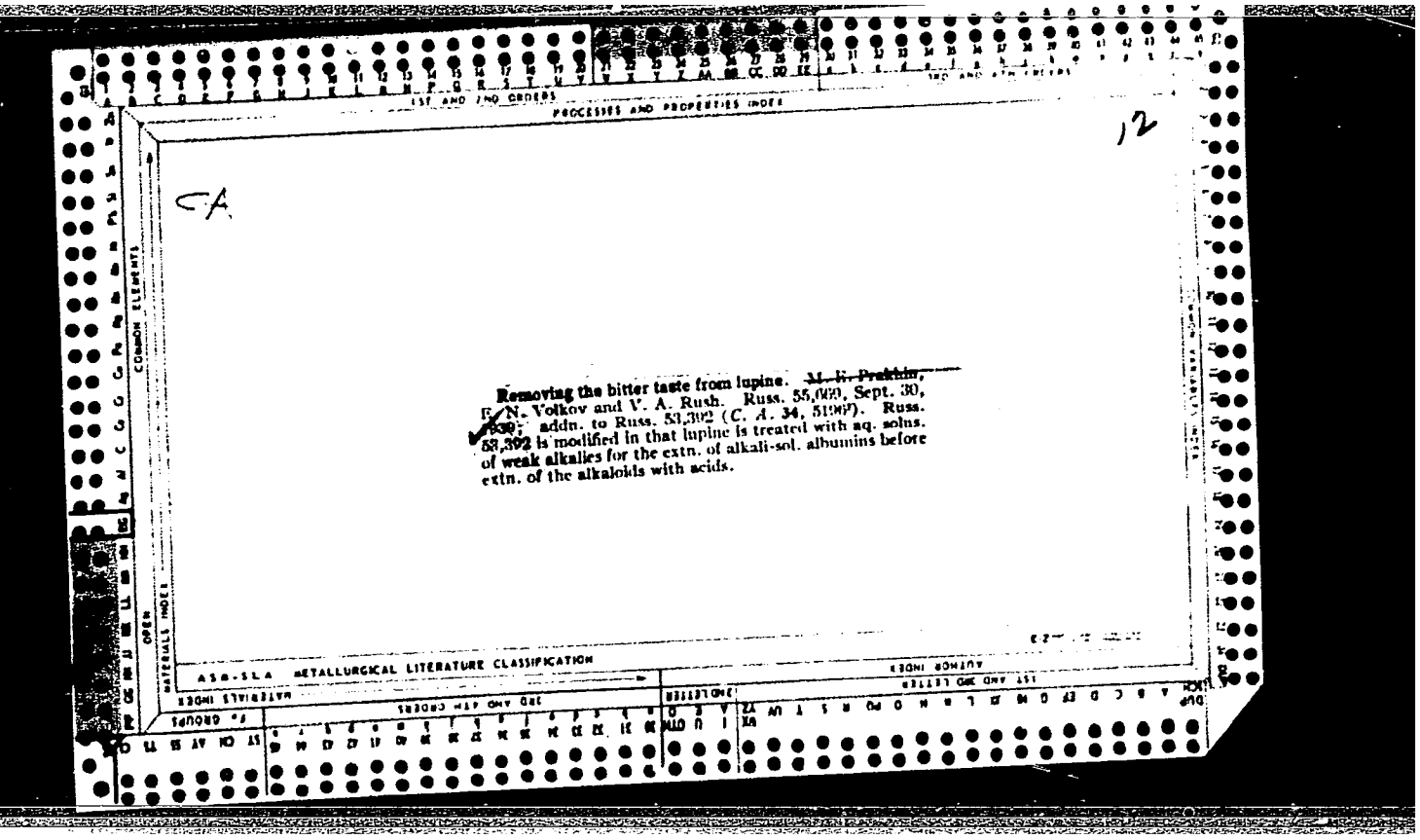
Removing the bitter taste from lupine. M. E. Prakhin. Russ. 53,302, June 30, 1938. Lupine is heated, the alkaloids are extd. with dil. inorg. acids and the product is neutralized with aq. alkali.



38230. PRAKHIN, M. YE.

Skarmlivaniye zhivotnym o be zvrezhennogo shrota kleshcheviny. Sov. zootekhniya, 1949, No 3, s. 69-73

1. PRAKHI[illegible], [illegible] YE., [illegible]OV, [illegible], [illegible] L, A.A. (Prof.)

2. USSR (600)

. Feeding and Feeding Stuffs

7. Oil cake and coarse meal of the castor plant rendered harmless by fctory treatment as a new protein food for domestic animals. Sov. zootekh, 7 No. 6, 1952
Kandidat Khmiicheskikh Nauk Vsesoyuznyy Nauchno

9. Monthly List of Russian Accession, Library of Congress August, 1952, Unclassified.
Issledovatel'skiy Institut Kormleniya, Sel'sk khozya ystvennykh Zhivotnykh

PRAKHIN, M.YE.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Foods

Experiment on the use of unshelled, coarsely ground cottonseed as a feed for livestock. M. E. Prakhin. *Maslobolno-Zhirovoye Prom.* 18, No. 11, [illegible] (1953).—An investigation of the effect of supplementation of cows' ration with unshelled, coarsely ground cottonseed contg. 0.04–0.05% of free gossypol, on milk production and the toxic effect of gossypol on the farm animals. Feeding of 3–4 kg. of cottonseed per day per cow, during 6 months' trial, produced no detrimental effect on milk production. Clinico-hematological studies and the analysis of urine failed to detect any pathol. changes in the animals. Vladimir N. Krukovsky

PRAKHIN, M.Ye., kandidat khimicheskikh nauk; SHERSHAKOVA, A.M.

Detoxication of cottonseed cake and meal in the oil plant. Trudy VNIIK 3:325-339 '56. (MLRA 10:4)
(Cottonseed meal) (Gossypol)

PRAKHIN, M.Ye., kand.khim.nauk

New method for keeping fishery waste. Zhivotnovodstvo 20 no.9: 49-54 S '58. (MIRA 11:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhivotnovodstva.
(Fish as food) (Feeding and feeding stuffs)

GERTSENSHTEYN, M.Ye.; PRAKHIN, P.F.

Measuring antenna noises. Izm.tekh. no.2:27-28 F '64.
(MIRA 17:4)

ACCESSION NR: AP4016586 S/0115/64/000/002/0027/0028

AUTHOR: Gertsenshteyn, M. Ye.; Prakhin, P. F.

TITLE: Measuring antenna noise

SOURCE: Izmeritel'naya tekhnika, no. 2, 1964, 27-28

TOPIC TAGS: antenna noise, radio noise, antenna noise measurement, radio noise measurement

ABSTRACT: A simple method is proposed for determining antenna noise by means of standard equipment which measures the noise figure with a reference signal; the method practically excludes mismatch and instability errors. First, the generator 3 and then the antenna 1 should be connected to the receiver 6 (see Enclosure 1). The relative noise temperature of the antenna is given by $\theta_A = 1-(1-M_2)F_0-M_2-(1-M_2)\theta_0$, where M_2 is the reference-signal level when the antenna is connected, F_0 and θ_0 are the noise figure and the relative noise

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GERTSENSHTEYN, M.Ye.; PRAKHIN, P.F.

Measuring the choherence of grid and anode noises of tubes.
Izm.tekh. no.11:50-52 N '62. (MIRA 15:11)
(Electron tubes--Noise)

PRAKHINA, T.I.

Use of the "Ural-1" computer in statistical treatment of the results of observations. Sbor. dokl. po gidr. VNIIG no.4: 274-278 '62. (MIRA 18:7)

PRAKHINA, T.I.

Mean error in determining the position of the angular line and the inclination of the orbits of binary stars. Uch.zap.LGU no.190:59-61 '57. (MLRA 10:7)

(Stars, Double)

PRAKHOROV, A.; BASOV, N.

Molecular generators and amplifiers.TR. from the Russian p. 439

POKROKY MATEMATIKY, FYSIKY A ASTRONOMIE. (Kednota ceskoslovenskych matematiku a fysiku) Praha, Czechoslovakia, Vol. 4, no. 4, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 10, Oct. 1959 Uncl.

KHOVANITS, V.K.; FOFANOV, A.A.; DROBININ, A.F.; PRAKHOV, A.I.

Automatic machine for measured electric cutting of multiple core conductors and the welding of their ends. Avtom. svar. 14 no.10:80-83 O '61. (MIRA 14:9)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova (for Khovanets, Fofanov). 2. Sverdlovskiy NIPTIMASH (for Drobinin, Prakhov).
(Electric conductors) (Electric metal cutting)

FOFANOV, A.A., kand.tekhn.nauk; KHOVANETS, V.K., inzh.;
DROBININ, A.F., inzh.; PRAKHOV, A.I., inzh.

Electric cutting of multicore cables with simultaneous welding of the cores at the severed ends. Svar. proizv. no.8:29-30 Ag '61. (MIRA 14:8)

1. Ural'skiy politekhnicheskiy institut (for Fofanov, Khovanets).
2. Sverdlovskiy NIPTIMASh (for Drobinin, Prakhov).
(Electric metal cutting)
(Electric cables)

PRAKHOV, A.M., kand.tekhn.nauk

New developments in the theory of centrifugal spray nozzles.
Teploenergetika 10 no.2:26-30 F '63. (MIRA 16:2)
(Fuid dynamics)

S/096/63/000/002/003/013
E194/E455

AUTHOR: Prakhov, A.M., Candidate of Technical Sciences

TITLE: A new trend in the theory of centrifugal nozzles

PERIODICAL: Teploenergetika, no.2, 1963, 26-30

TEXT: In recent years the author has led a tendency away from classical nozzle theory, which is based on the principle of maximum flow, in favour of a theory based on flow momentum equations. The new theory has not gone unchallenged and here the author discusses recent published work on the subject. Weaknesses of the old theory are emphasized and objections to the new one are refuted. On the basis of momentum theory, the following expression is derived for the flow factor of a nozzle

$$\mu = \frac{1 - \sqrt{1 - (1 - \tau^2)\cos^4\left(\frac{\theta}{2}\right)}}{(1 - \tau^2)\cos^4\left(\frac{\theta}{2}\right)} \qquad (8)$$

where τ the relative radius of the nozzle (ratio of radius of discharge aperture to radius of nozzle body), θ angle between

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the convergent part of the nozzle and its axis. Check tests were made with water and it is concluded that Eq.(8) correctly reflects the influence of nozzle inlet construction on the flow. Hence the underlying assumptions are sound and the momentum theory is upheld. There are 6 figures and 1 table.

PRAKHOV, A.M.

Some characteristics of the centrifugal nozzle of gas-turbine engines. Avtom.reg.aviadvig. no.4:119-134 '62. (MIRA 15:11)
(Airplanes--Turbojet engines) (Nozzles)

S/682/62/000/004/006/006
D234/D308

AUTHOR: Prakhov, A.M.

TITLE: Special properties of centrifugal atomizers of gas turbine engines

SOURCE: Avtomaticheskoye regulirovaniye aviadvigateley; sbornik statey, no. 4, Moscow, 1962, 119-134

TEXT: The author reviews the results obtained by himself and others in previous publications, and also several existing types of atomizers. Parameter effects of the atomizer on the restraint of motion of the liquid are discussed. There are 8 figures and 5 references.

Card 1/1

Tkachev, A.M.

2(1,2) P.4 PHASE I BOOK EXPLOITATION SOV/3114

Avtomaticheskoye regulirovaniye aviadvigateley; sbornik statey, vyp. 1 (Automatic Control of Aircraft Engines; Collection of Articles, Nr 1) Moscow, Oborongiz, 1959. 182 p. Errata slip inserted. 3,400 copies printed.

Ed. (Title page): A A. Shevyakov; Ed. (Inside book): S.I. Bumshteyn; Ed. of Publishing House: N.A. Gortsuyeva; Tech. Ed.: N.A. Pukhlikova; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for workers at scientific research institutions and design bureaus.

COVERAGE: This book contains three articles in which results of the investigation of pressure-ratio regulator characteristics are described. These regulators work on the principle of small drops and proportion reduction and may be used in aircraft engines. A thorough analysis of a laminar flow of air in capillary conduits of automatic regulating systems is given. Problems connected with the calculation of centrifugal atomizers in which viscosity

Card 1/5

of the working fluid is taken into consideration are discussed in a special article.

TABLE OF CONTENTS:

injector should be avoided. The problem was restricted to a one-stage centrifugal atomizer. However, the calculation of the problem made possible the consideration of more complicated atomizers.

AVAILABLE: Library of Congress

AC/jb
4-14-60

Card 5/5

PRIMAKOV, M. M.

PHASE I BOOK EXPLOITATION SOV/5295

Avtomaticheskoye regulirovaniye aviatsionnykh dvigateley; sbornik statey (Automatic Control of Aircraft Engines; Collection of Articles) No. 2. Moscow, Oborongiz, 1960. 134 p. 3,900 copies printed.

Ed.: Sheyrakov, A. A.; Ed.: K. I. Grigorash; Technical Ed.: L. A. Garnukhina; Managing Ed.: A. S. Zayzovskaya, Engineer.

PURPOSE: This book is intended for engineers specializing in aircraft engine design and operation.

COVERAGE: This collection of 7 articles deals with various systems of aircraft engine control based on pneumatic, hydraulic, thermal, and electrical phenomena. One of the articles discusses nuclear reactors as objects to be regulated. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

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Card 3/3

PRAKHOV, L. P. Cand Agr Sci -- "Meat qualities of the red steppe and the white-headed Kazakh cattle of Karagandinskaya Oblast. According to the example of the 'Karagandinskiy' sovkhoz." Alma-Ata, 1960 (Min of Higher and Secondary Specialized Education KazSSR. Alma-Ata Zoovet Inst). (KL, 1-61, 202)

PRAKHOV, L.P.

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(Eremurus) (Tulips)

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Prolonged apnoea caused by the use of listenon. Vest.khir. 89 no.8:61-64 Ag '62. (MIRA 15:10)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. A.A. Busalov) 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova.

(APNOEA) (DITILIN)

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1. Iz laboratorii konservirovaniya krovi (zav. - prof. F.R. Vinograd-Finkel') TSentral'nogo ordena Lenina instituta gematologii i pereli-vaniya krovi (direktor - dotsent A.Ye. Kiselev) i kafedry fakul'tet-skoy khirurgii (zav. - prof. A.A. Busalov) pediatricheskogo fakul'-teta II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

BUSALOV, A.A. (Moskva, ul. Serafimovicha, d.2, kv. 269); PRAKHOV, N.V.

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PRAKHOV, N.V. (Dubno, Moskovskoy oblasti, Teatral'nyy pr.d.5,kv.35)

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(ASTHMA) (OPERATIONS, SURGICAL)

PRAKHOV, N. V.

Prolonged apnea caused by the use of listenon (succinylcholine chloride). Grud. khir. 4 no.1:105-106 Ja-F '62. (MIRA 15:2)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. A. A. Busalov) II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova.

(APNOEA) (DITILIN)

[illegible], P.

Experiment in directing the sex in sheep by influencing the sperm with diluted hypertonic glucose phosphate. p. 333.

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ZHUKOVSKIY, A.V., professor; PRAKHOV, N.N.; PRIKHOD'KO, N.P.; LAZITSKAYA, L.N.

Effect of organomineral mixtures on potatoes. Agrobiologiia no.3:107-108 My-Je '56. (MLRA 9:9)
(Potatoes) (Fertilizers and manures)

R

BULGARIA / Diseases of Farm Animals. General Problems.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 7419

Author : Prakhov, P.; Nanchov, I.
Inst : Bulgarian AS, Institute of Animal Husbandry
Title : Inflating the Vagina as a Means of Treating "Retention" of Milk by Cows and Female Buffaloes

Orig Pub : Izv. In-ta zhivotnov"dstvo. B"lg. AN, 1957, kn. 8, 203-220

Abstract : Inflating with air was successfully applied in "retention" of milk which occurred as a result of the inhibitory reflex appearing in agalactia after parturition. Ten to fifteen minutes before milking an inner football tube was placed into the vagina and then inflated with air which was pumped in through a rubber hose until the animal hunched slightly and spread his legs; then the hose was tied and the inner tube was

Card 1/2

BULGARIA / Diseases of Farm Animals. General Problems. R

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 7419

left in the vagina until the milking was terminated. The above described method did not produce any effect in cases of decreased or discontinued lactation which occurred 1 - 6 months after parturition. -- A. D. Musin

Card 2/2

PRAKHOV, P.V.

Calculating the productive capacity of telegraph equipment.
Elektrosviaz' 11 no.3:64-74 Mr '57. (MLRA 10:5)
(Telegraph--Testing)

PRAKHOV, P.V., kandidat ekonomicheskikh nauk

Calculating the number of operators for telegraph enterprises. Vest. sviazi 15 no.9:13-14 S'55. (MLRA 8:12)

1. Dotsent Moskovskogo elektrotekhnicheskogo instituta svyazi
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